

## INTRODUCTION

- Recurrent vaginitis is defined as having three or more confirmed episodes within a year.<sup>1</sup>
- Recurrence rates of vaginitis have been reported in up to 60% of previously infected women.<sup>1</sup>
- Overgrowth of *Gardnerella Vaginitis* is the most common cause of bacterial vaginitis, and *Candida albicans* is the most common cause of fungal vaginitis.<sup>1,2</sup>
- Commonly known risk factors include multiple sex partners, unprotected sex, douching, recent antibiotic use, and estrogen therapy.<sup>3</sup>

## CASE PRESENTATION

A healthy 34-year-old female complains of recurrent vaginitis since the birth of her son two years ago. Vaginal irritation is accompanied by thick off-white vaginal discharge. She attributes symptoms to her IUD placed at six-weeks postpartum and asks if this can be removed. Symptoms occur after sexual intercourse. Her husband has incorporated oral sex into their routine sexual practice to help counteract the reduced libido she developed since having their son. She is married and monogamous. She has no prior history of STI. She denies fevers, unintentional weight change, menstrual irregularity, rash or genital lesions, dyspareunia, or urinary complaints.

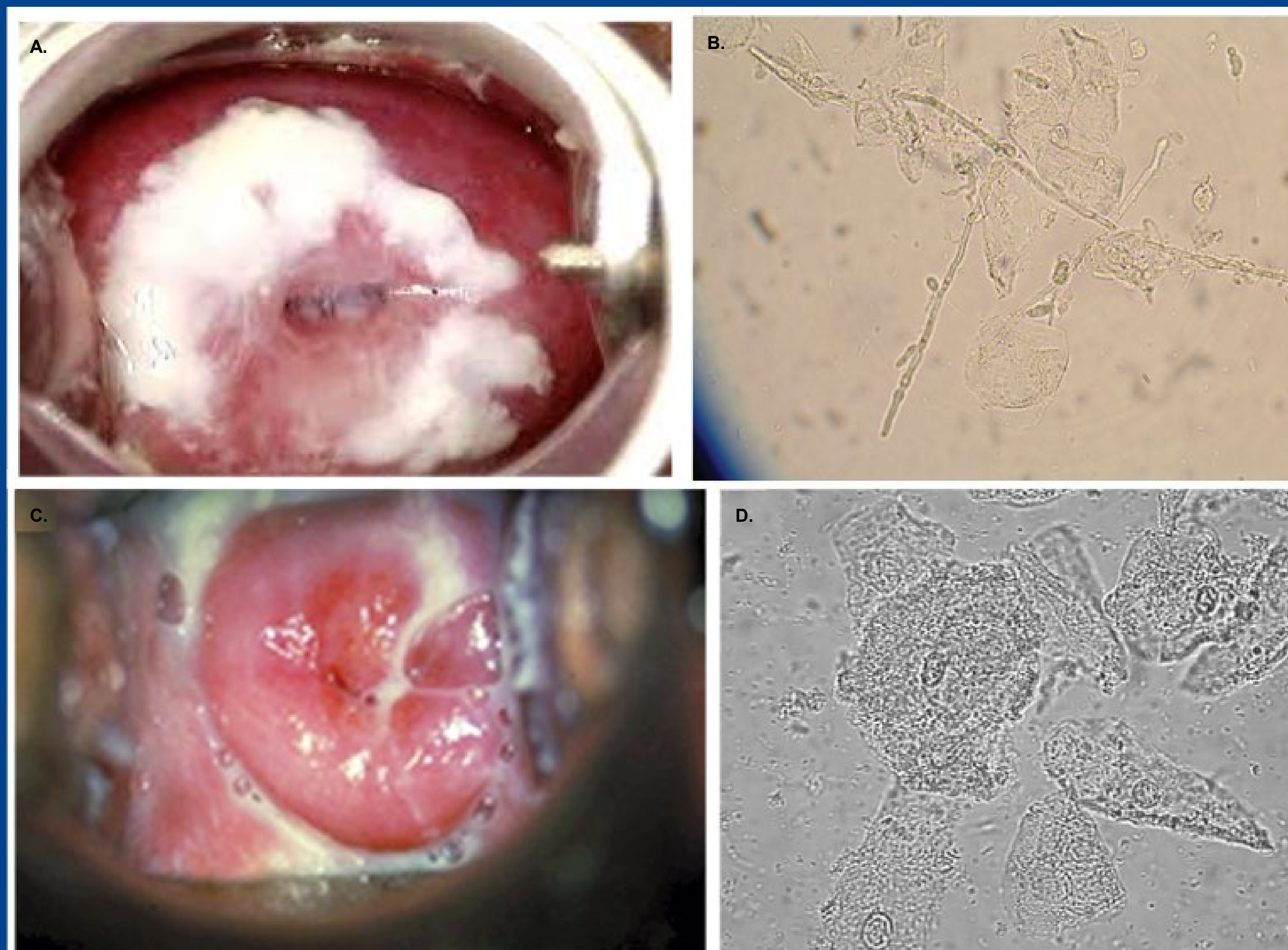
VSS, afebrile. Pelvic exam reveals mild suprapubic tenderness, erythema of the vaginal introitus, and thick off-white vaginal discharge with slight odor. Urine pregnancy test is negative. Vaginal swabs for gonorrhea and chlamydia are negative. Wet mount shows clue cells, and KOH prep shows pseudohyphae with budding yeast.

Her husband is advised to thoroughly gargle with oral antiseptic prior to engaging in oral sex. On follow up, the patient reports no further postcoital vaginitis episodes.



scan code for complete abstract

# Oral Sex May Contribute to Recurrent Bacterial and Fungal Vaginitis.



A. Vulvovaginal Candidiasis; B. Wet mount prep of *Candida Albicans*; C. Bacterial Vaginosis; D. Wet mount prep of *Gardnerella Vaginalis*

## DISCUSSION

- Current data is inconsistent regarding whether oral sex is considered a risk factor for recurrent vaginitis.
- Anecdotal evidence from our patient's case prompted further investigation into the interactions between oral sex and recurrent vaginitis.
- An extensive literature review suggests that dysbiosis in vaginal flora resulting in vaginitis may be due to direct inoculation of oral microbes or indirect effects of their byproducts.<sup>5,6,7</sup>
- Furthermore, studies have shown that the use of oral antiseptic can eliminate oral flora known to impact vaginal microbiota.<sup>7</sup>

## CONCLUSION

- Research on oral sex as a risk factor for vaginitis is lacking, possibly due to the sensitive nature of discussing detailed sexual practices with patients, which is an important part of patient history.
- We plan to conduct a meta-analysis to further investigate the effects of varying vaginal and oral flora compositions on many aspects of the vaginal environment.
- We recommend a case-control study be performed in the future to investigate the effectiveness of using oral antiseptic prior to oral sex for prevention of recurrent vaginitis.

## REFERENCES

1. Vaginitis in Nonpregnant Patients: ACOG Practice Bulletin, Number 215. *Obstet Gynecol.* 2020 Jan;135(1):e1-e17. doi: 10.1097/AOG.0000000000003604. PMID: 31856123.
2. Fethers, Katherine A., Fairley, Christopher K., Morton, A., Hocking, Jane S., Hopkins, C., Kennedy, Lisa J., Fehler, G., & Bradshaw, Catriona S. (2009). Early Sexual Experiences and Risk Factors for Bacterial Vaginosis. *The Journal of Infectious Diseases*, 200(11), 1662-1670. <https://doi.org/10.1086/648092>
3. Sobel JD, Sobel R. Current and emerging pharmacotherapy for recurrent bacterial vaginosis. *Expert Opin Pharmacother.* 2021 Aug;22(12):1593-1600. doi: 10.1080/14656566.2021.1904890. Epub 2021 Mar 29. PMID: 33750246.
4. Bradshaw CS, Morton AN, Hocking J, Garland SM, Morris MB, Moss LM, Horvath LB, Kuzevska I, Fairley CK. High recurrence rates of bacterial vaginosis over the course of 12 months after oral metronidazole therapy and factors associated with recurrence. *J Infect Dis.* 2006 Jun 1;193(11):1478-86. doi: 10.1086/503780. Epub 2006 Apr 26. PMID: 16652274.
5. Agarwal, K., Robinson, L. S., Aggarwal, S., Foster, L., Hernandez-Leyva, A., Lin, H., Tortelli, B. A., O'Brien, V. P., Miller, L., Kau, A. L., Reno, H., Gilbert, N. M., Lewis, W. G., & Lewis, A. L. (2020). Glycan cross-feeding supports mutualism between *Fusobacterium* and the vaginal microbiota. *PLOS Biology*, 18(8), e3000788-e3000788. <https://doi.org/10.1371/journal.pbio.3000788>
6. Morvarid Noormohammadi, Ghazaleh Eslamian, Seyyede Neda Kazemi, & Bahram Rashidkhani. (2022). Dietary acid load, alternative healthy eating index score, and bacterial vaginosis: is there any association? A case-control study. *BMC Infectious Diseases*, 22(1). <https://doi.org/10.1186/s12879-022-07788-3>
7. Shinada, K., Ueno, M., Konishi, C., Takehara, S., Yokoyama, S., Zaito, T., Ohnuki, M., Wright, F. A. C., & Kawaguchi, Y. (2010). Effects of a mouthwash with chlorine dioxide on oral malodor and salivary bacteria: a randomized placebo-controlled 7-day trial. *Trials*, 11(1). <https://doi.org/10.1186/1745-6215-11-14>

## ACKNOWLEDGEMENTS

We would like to thank Dr. David Adelstein and Dr. Shafik Habal for their contributions and guidance for this project.